

Response

A. Introduction

Claims 1-14 were pending prior to entry of the preceding amendments, and *claims 1-6 and 8-14* are pending now. The Examiner has initially rejected the previously-pending claims, contending claims 1-2 and 7-11 are anticipated by or obvious in view of U.S. Patent No. 6,267,016 to Call and claims 3-12 are obvious in view of combined disclosures of the Call patent and U.S. Patent No. 4,324,146 to Born. The Examiner additionally objected to the drawings as not matching text appearing at pages 12 and 14 of the application and withdrew claims 13-14 from consideration as directed to a non-elected invention.

B. The Drawings

The Examiner objected to the drawings as not including Figures 2-3 in the manner described on pages 12 and 14 of the application. Applicants have corrected typographical errors appearing on page 14 so that the affected paragraph refers to Figures 3a and 3b. They also have deleted mention of “Figure 3” on page 12 of the application, as such mention includes a typographical error and Figures 1-2 have already been introduced in the description. Applicants believe these corrections resolve the Examiner’s objections as to the drawings of the application and accordingly request that the objections be withdrawn.

C. The Claims

Amended claim 1 details an apparatus for collecting particles from air. The apparatus includes a cyclone, means maintaining an airflow therethrough, and means delivering a collecting fluid from a reservoir to particles separated from the air

flow in the cyclone. The cyclone has air inlet and outlet means and a body, with *the air inlet means being associated with means for heating the incoming air*.

Incorporating part of prior claim 7, claim 1 now recites that the apparatus additionally includes

means for enclosing, at least in part, the air outlet means and at least one of the cyclone body or reservoir, so as to trap at least a portion of the heated air.

As noted in the application, such an apparatus helps avoid problems caused when the collecting fluid freezes, which it sometimes traditionally tends to do under certain environmental conditions within the collecting fluid reservoir and/or through contacting the (cold) incoming air in the cyclone body. Heating the incoming air and at least partially enclosing the air outlet and at least one of the cyclone body or reservoir, so as to retain at least some of the heated air, provide inexpensive and portable solutions to this problem. See, e.g., Application at p. 3, ll. 5-7; p. 7, ll. 14-21.

Neither of the emphasized features of claim 1 is disclosed or suggested by the Call patent. The particle-collecting apparatus of the Call patent includes a cyclone with air inlet and outlet and a reservoir containing collecting fluid. To prevent the collecting fluid from freezing, *the apparatus contemplates adding a heating element so as to heat the collecting fluid directly*. See Call, col. 6, ll. 52-57 (discussing placing heating element “around, adjacent to, or inside” receiver 38). The Call patent contains *no description whatsoever* of heating incoming air--much less with a heater associated with the air inlet of the cyclone--contrary to the original recitation of claim 1. It *further fails to suggest enclosing any portion of both the air*

outlet and either the cyclone body or the receiver so as to trap heated air (as now recited in claim 1). These differences provide two distinct reasons for concluding that the Call patent neither anticipates nor renders obvious any of the pending claims.

Nor are these deficiencies of the Call patent cured by the Examiner's reference to the Born patent. Although the Born patent discloses an apparatus comprising heating elements to heat circulating air, such heating occurs to ensure pollutant is discharged from a permeation tube. See Born, col. 4, ll. 5-9. ***In no way*** does the Born patent relate to collecting fluids or to preventing such fluids from freezing because of contact with (cold) incoming air. It thus contains ***no direction whatsoever*** to heat incoming air or to provide heating of the air outlet and either or both of a cyclone body or reservoir. Hence, even were someone skilled in the art to elect--contrary to reason--to remove the heating element from "around, adjacent to, or inside" receiver 38 of the Call patent, replacing the removed element with structure from the Born patent would not yield the apparatus of claim 1. Applicants accordingly believe pending claims 1-6 and 8-12 are allowable based on multiple rationales and request that the claims be allowed.

Conclusion

Applicants request that the Examiner allow claims 1-6 and 8-12 and that a patent containing these claims issue in due course.

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Respectfully submitted,



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